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AMENDMENT TO THE CLAIMS

1. (currently amended) A man-machine dialogue system comprising an interactive computer system with:

an input device for receiving speech input from a user;

an output device for generating output to a user;

an object system which is an information source or store, or a command and control device, the object of the dialogue being to interface between this system and a user, wherein the object system further comprises knowledge sources to assist recognition;

a dialogue manager, which controls the dialogue between the object system and a user ~~dependent upon~~ comprising:

a dialogue specification applied to the speech input from the user during recognition,  
comprising:

a set of augmented transition networks (ATNs), having a set of states, wherein each state is one of a question/answer cycle, data processing, a simple junction, and a sub-dialogue state through which are propagated;

one or more tokens propagated through the states, each token comprising a set of fields which together define a current state of belief of a dialogue controller ~~for the user's reply to a question posed by the dialogue manager,~~ dependent upon the preceding user-system interchanges and information obtained from the object system.

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2. (original) A system according to claim 1, further comprising means for copying and updating the token through each state in an ATN as the dialogue controller passes therethrough.

3. (original) A system according to claim 2, wherein each token is linked to its predecessor, so enabling the dialogue controller to regain a previous state of data maintained at some point during the history of the dialogue.

4. (currently amended) A system according to claim 1, wherein a token or tokens can be received, modified, and transmitted at each state~~each state is associated with an action or actions, and each action may receive, modify and transmit a token or tokens.~~

5. (previously presented) A system according to claim 1, employing an ATN to specify the course of the dialogue, and wherein each state may represent a junction, a system action, such as a user interaction, or an embedded dialogue represented by a further augmented transition network.

6. (previously presented) A system according to claim 1, where the input device is a speech recognizer.

7. (previously presented) A system according to claim 1, where the input device is constrained by a set of statistical grammars which may be defined using an ATN.

8. (previously presented) A system according to claim 7, wherein each of the states may represent a junction, a terminal state, such as a word or other acoustical phenomenon, or an embedded statistical grammar represented by a further ATN.

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9. (previously presented) A system according to claim 7, wherein tokens are propagated for the user-interaction dialogue state to the start of the input network, and through a best matching path of the input network back to the user-interaction dialogue state.

10. (previously presented) A system according to claim 7, wherein a token is propagated for each alternative input hypothesis considered by the input device, and the score assigned to the hypothesis is a modifiable field of the token.

11. (previously presented) A system according to claim 1, wherein the output device is a speech generator.

12. (previously presented) A system according to claim 1, wherein user output is represented by an augmented transition network.

13. (previously presented) A system according to claim 11, where the states represent an output word or other acoustical or linguistic phenomenon.

14. (original) A system according to claim 12, wherein tokens are propagated from the dialogue user-interaction state to the first user output state, and from each user output state to the start of the input network.

15. (currently amended) A system comprising: an output device for generating output to a user;

an input device for receiving input from a user;

a tool for generating an object system which is an information source or store, or a command and control device, the object of the dialogue being to interface between the system and the user; and

a dialogue manager, which controls the dialogue between the

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object system and the user based upon: a dialogue specification, comprising a set of augmented transition networks (ATNs), having a set of states through which are propagated one or more tokens, wherein each state is one of a question/answer cycle, data processing, a simple junction, and a sub-dialogue state, and wherein each token ~~comprising~~ comprises a set of fields which together define a current state of belief of a dialogue controller, dependent upon the preceding user-system interchanges and information obtained from the object system.

16. (currently amended) A method for controlling dialogue between a computer system and a human user comprising the steps of:
- outputting at least one speech signal to the user;
  - inputting a speech signal from the user in response to each of the at least one speech signal output to the user;
  - propagating at least one token over a set of augmented transition networks comprising a set of states, wherein each state is one of a question/answer cycle, data processing, a simple junction, and a sub-dialogue state, wherein propagating comprises:
    - applying a dialogue specification to the speech signal input from the user; and
    - updating the at least one token over the set of augmented transition networks, each token comprising a set of fields which together define a current state of belief of a dialogue controller, dependent upon the preceding user-system interchanges and information obtained from the object system.

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17. (previously presented) The method of claim 16, wherein generating output to the user comprises asking the user a question, and wherein receiving input from the user comprises receiving the user's answer to the question.
18. (previously presented) The method of claim 16, wherein propagating comprises propagating a token for each alternative hypothesis being considered, and further comprising scoring each alternative hypothesis based on a best matching path through the augmented transition network.
19. (currently amended) A computer-readable medium including instructions readable by a computer which, when implemented perform steps comprising:
  - generating a speech-based output to the user;
  - receiving a speech-based input from the user in response to the generated speech-based output;
  - propagating at least one token over a set of augmented transition networks, wherein propagating comprises:
    - applying a dialogue specification to the speech signal input from the user; and
    - updating the at least one token over the set of augmented transition networks comprising a set of states, wherein each state is one of a question/answer cycle, data processing, a simple junction, and a sub-dialogue state, and wherein each token comprises a set of fields which together define a current state of belief of a dialogue controller, dependent upon the preceding user-system interchanges and information obtained

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from the object system.

20. (previously presented) The computer readable medium of claim 19, wherein each token further comprises a link to its predecessor, from which the history of the dialogue is obtainable.